1. An automated manufacturing method, comprising the steps of:

receiving a description of an object to be fabricated having a desired geometry;

identifying regions in which at least one automated material addition process and at least one automated material subtraction process should occur to fabricate the object in accordance with the description;

generating toolpaths associated with the material addition and subtraction processes; and

fabricating the object in accordance with the toolpaths.

2. The method of claim 1, wherein the regions are layers, volumes, lines or voxels.

3. The method of claim 1, wherein the automated material subtraction process includes milling or the use of lasers, knives, hot wires, arc cutters, or plasmas cutters.

4. The method of claim 1, wherein the automated material addition process includes solid-state or fusion welding, laser material deposition, metal spraying, or adhesive bonding.

5. The method of claim 1, wherein:

the automated material addition process includes welding; and

calculating weld pressure, temperature, excitation amplitude or frequency to fabricate the object in accordance with the description.

6. The method of claim 1, wherein the subtractive process does not require the use of work holding fixtures or fiducial marking.

7. The method of claim 1, further including the step of soft fixturing multiple

parts.

8. The method of claim 1, wherein:

the automated material addition process includes ultrasonic consolidation; and

calculating consolidation pressure, temperature, excitation amplitude or frequency to fabricate the object in accordance with the description.

9. The method of claim 1, further including the step of blending the regions to eliminate seams that would be generated due to the subtractive process used.

10. The method of claim 1, further including the step of creating enclosed and overhanging features using the additive or subtractive manufacturing processes, or a combination thereof.

11. The method of claim 1, further including the steps of:

identifying changes in the desired geometry;

removing excess material to achieve the desired geometry.

12. The method of claim 1, further including the steps of:

analyzing the description of the object to be fabricated to recognize the tool size, heated wire or laser beam size required to fabricate the object in accordance with the description.

13. The method of claim 1, further including the step of using a slab generation technique without the use of a tessellated model.

14. The method of claim 1, further including the step of fabricating the object vertically or horizontally in accordance with the description.

15. The method of claim 1, further including the step of generating enclosed cavities within the object during the fabrication thereof.

16. The method of claim 1, further including the step of calculating undercut tool paths without tool or object reorientation.

17. The method of claim 1, further including the step of repairing an existing mold or other object.

18. The method of claim 1, wherein a tool path associated with additive processing is based on the nature of the additive process used.

19. The method of claim 1, further including the step of incorporating negative draft angles using the additive or subtractive processing.

20. The method of claim 1, further including the steps of:

generating finish paths that are dependent on the flute height of the smallest tool required; and

determining what Z height should be deposited and trimmed prior to finishing based on the flute height of the smallest tool required.

21. The method of claim 1, wherein:

certain features are deposited with excess stock based on feature geometry; and

removing material to enhance the deposition process, or speed the build rate of the object.

22. The method of claim 1, further including the step of generating a conformal support material containment structure.